Southern Region EMS Council, Inc.
Regional EMT-I Standing Orders

The following protocols are for use by medical personnel at the EMT-I level. These protocols are intended as guidelines for consistent, appropriate patient care. Medical personnel will contact the receiving emergency room physician or their physician medical director before deviating substantially from these orders. In the event that medical crews are unable to establish radio contact, they should proceed as per these protocols and notify the hospital or physician sponsor of the actions taken at the first opportunity to establish radio contact. Transportation to a hospital or appropriate medical facility should proceed without undue delay.

It is the responsibility of all emergency medical service personnel operating under these standing orders to become familiar with, and practice according to these orders.

It is the responsibility of all emergency medical service personnel operating under these standing orders to be familiar with the practices of Universal Precautions, or Body Substance Isolation (BSI) and to utilize them in accordance with their respective departments Bloodborne Pathogen Policy.

These orders may change as new techniques are developed or new data are brought to light. It will be the responsibility of all medical personnel to remain abreast of such changes and to guide their actions accordingly.

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I. Patient Assessment

A. Scene Size-up

Use appropriate Body Substance Isolation (BSI)
Determine Scene Safety
Check mechanism of injury (MOI) /Nature of illness (NOI)
Determine number of patients
Request additional help if necessary
Establish C-spine stabilization early, if indicated by MOI

B. Initial Assessment

General impression of patient (good or poor)
Identify apparent life threats/chief complaint.
Assess the level of consciousness (**A**lert, **V**erbal, **P**ainful, **U**nresponsive) & Glasgow Coma Scale (p. 35)
Assess and secure the airway (p. 6)
Assess and manage breathing (p. 6)
Oxygen therapy (p. 6)
Assess circulation (pulse, skin color, temperature, condition)
Identify and control major hemorrhage
Identify priority patients/make transport decision

C. Focused History/Physical Exam or Rapid Assessment

Determine which exam to be used
Perform specific exam (**Focused** or **Rapid**)
Obtain vital signs
Obtain SAMPLE history (**S**igns/Symptoms, **A**llergies, **M**edications, **P**ast medical history, **L**ast oral intake, **E**vents leading up to illness or injury)
Focused: Perform the exam focusing on the injury or illness
Rapid: Perform a rapid head-to-toe survey only treating life threatening findings

D. Detailed Physical Exam

Usually performed enroute and if there is adequate time
Only performed if life threatening injuries and conditions have been effectively managed
Performed using more detail and time than a rapid trauma assessment
Injuries will be managed when identified

E. On-going Assessment

Repeat Initial Assessment
Reassess vital signs
Repeat components of focused history
Reassess any interventions

II. Airway Management

A. Open Airway

If mechanism of injury suggests spinal injury, assume c-spine injury and maintain c-spine stabilization

Use jaw thrust or chin lift maneuver if patient is unconscious

B. Airway Adjuncts

Use oral airway if unconscious and no gag reflex
Use the tongue blade technique when inserting an oral airway in a child or infant
Use nasal airway if gag reflex is intact, but patient cannot maintain airway
Lubricate nasal airway before insertion with non-petrolium lubricant

C. Suction

Suction as needed to maintain a clear airway
Apply suction for not more than 15 seconds
Aggressively oxygenate patient via NRB or BVM hyperventilation before and after suctioning

D. Oxygen (p. 34)

10-15 LPM via pocket mask, BVM, or Flow Restrictive Oxygen Powered Device for apneic patients or those with inadequate respiratory effort

10-15 LPM via non-rebreather for general trauma or medical
1-6 LPM via nasal cannula if mask not tolerated
If pulse oximeter is available, goal is to keep oxygen saturation at 92% or greater
Never withhold oxygen from a patient

E. Positioning

If patient is alert and showing signs of respiratory distress do not lie patient flat
If patient is unresponsive and patient may vomit, lie patient on side if possible
Ask the patient to position themselves (position of comfort) if possible

F. Bag Valve Mask

Ventilation is very important for all patients with inadequate respiratory rate, volume, or depth
BVM must be hooked up to high flow oxygen in order to properly oxygenate the patient

III. Medical Emergencies

A. Abdominal Pain

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Gather history (see p. 41 for specific medical questions)
Gather orthostatic vital signs as indicated (if patient is hypotensive supine, do not stand)
Place the patient in position of comfort.
Shock protocol as appropriate (p. 15)
NPO (nothing by mouth) (Do not allow the patient to eat or drink)

B. Allergies and Anaphylaxis

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Gather history (See p. 41 for specific medical questions.)
If shock and/or respiratory distress is present **and** with physician approval, administer patient's **prescribed** Epi-Auto injector (p. 32)
Shock protocol as needed (p. 15)

C. Behavioral and Psychiatric

Ensure scene safety at all times
If scene is not safe **DO NOT ENTER**
Once contact is made with the patient stay with them at all times, unless they pose a danger to you or the other EMS responders
Request police assistance if indicated
Perform initial assessment from a distance if necessary
Attempt to establish rapport
Gather history as available
If able, assess vital signs
If patient is suicidal-do not leave patient alone **unless** they become a danger to responders
Remove all dangerous objects
If there are concerns about suicide: Ask the patient the following three questions:
- "Were you trying to hurt yourself?"
- "Have you been feeling that life is not worth living?"
- "Have you been feeling like killing yourself?"
- If the answer is "yes" to any of the above questions, the patient should be transported to a medical or pshychiatric facility.

Look for and gather pills and bottles or record medication name, date prescribed, doctor issuing, and number of pills left
Make sure to assess and treat medical conditions and injuries found. Remember hypoglycemia, hypoxia, shock, drug ingestion, head injuries, …can cause a behavioral/psychiatric emergency
Transport in a calm, quiet manner and provide supportive care

D. Cardiac Arrest (See p. 28-29 regarding terminating resuscitation.*)*

Verify pulselessness and begin CPR.
Apply AED and use as designated in your local AED Protocol.
Airway management protocol and oxygen therapy. (p. 6)
Contact ALS responders and Medical Control as soon as possible.

E. Non-Traumatic (cardiac suspected) Chest Pain

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Gather a complete history when appropriate. (see p. 41 for specific medical questions.)
Obtain vital signs
If systolic BP is 100 or higher and patient has own prescribed nitroglycerin(NTG), obtain permission from medical control to administer one tablet or spray sublingually every 3 to 5 minutes up to 3 doses or patient experiences relief or systolic BP falls below 100 mmHg. (p. 33)
Do not allow the patient to walk
Request ALS support if available
Transport the patient as soon as possible

F. Diabetic Emergencies

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Use Dextro stick/Chem stick evaluation if available
If there is any possibility of hypoglycemia and the patient can swallow, administer one tube of oral glucose gel (p. 32) or alternative sugar source
Obtain vital signs
Obtain a complete history when appropriate (see p. 41 for specific questions.)
If patient is unresponsive, request ALS support if available
Transport as indicated

G. Respiratory Distress

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
If pulse oximeter is available, goal is to keep oxygen saturation at 92% or greater
Never withhold oxygen from a patient
Assess lung sounds frequently (Absence of abnormal lung sounds may indicate no air movement- a dire emergency)
Obtain complete history when appropriate (see p. 41 for specific medical questions.)
Assist patient to position of comfort--do not force the patient to lie flat
Treat specific cause as indicated below
If patient goes into **respiratory failure** control the airway and assist ventilations with high flow oxygen (p. 6)

Asthma/COPD

Perform as stated in respiratory distress.
If patient has own prescribed metered dose inhaler, obtain permission from medical control to administer as directed (p. 31)
Consider requesting ALS support if available
Transport as indicated

Congestive Heart Failure with Pulmonary Edema

Perform as stated in respiratory distress
Place patient in high Fowler's position (sitting upright with legs dependent) if no other contraindications exist
Consider requesting ALS support if available
Transport as indicated

H. Seizures

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Protect patient from further injury. Restrain as necessary
Obtain complete history (see p. 41 for specific medical questions.)
Search patient's location for medications
Use Dextro stick/Chem stick evaluation if available. If Blood Sugar is low treat for Diabetic Emergency (p. 8)
Consider requesting ALS support if available
Transport as indicated

I. Stroke/Brain Attack

Airway management protocol and oxygen therapy. (p. 6)
Perform patient assessment. (p. 5)
Obtain complete history when appropriate. (see p. 41 for specific medical questions.)
Assess for changing neurological deficit throughout transport and record any changes
Perform Glasgow Coma Scale (p. 35) and repeat throughout transport, record any changes.
Elevate head of bed 30 degrees if not contraindicated by other factors
Consider requesting ALS support if available
Transport as indicated

J. Toxic Ingestion or Poisoning

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Try to determine amount, type, time, and intent of ingestion
Save any emesis if able
Collect medicine containers if possible and bring to hospital
Gather a complete history (see p. 41 for specific medical questions)
Contact Medical Control with the following:

- -status of gag reflex (present or not)
- -level of consciousness (GCS p. 35)
- -type of ingested material
- -time ingested
- -amount ingested
- -weight of patient
- -ETA to receiving facility.

If appropriate, obtain orders for Activated Charcoal administration (1 gram/kilogram) (p. 31)
Assess for suicide risk and take appropriate precautions
Consider requesting ALS support if available
Transport without delay

K. Unconscious Unknown

Aggressive airway management and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Gather all pertinent information but do not delay treatment or transport
Request ALS support if available
Transport as indicated

L. Syncope

Airway management protocol and oxygen therapy (p. 6)
Shock protocol as appropriate (p. 15)
Perform patient assessment (p. 5)
Assess for fall-related trauma and take necessary precautions.
Obtain complete history. (see p. 41 for specific medical questions)
Pay particular attention if possible pregnancy, abdominal pain, or palpitations are present
Request ALS support if available
Transport as indicated
Be prepared with AED

IV. Trauma

A. General Principles

Secure airway appropriate to patient's LOC, and provide aggressive oxygen therapy (p. 6)
Perform patient assessment (p. 5)
If rapid assessment is indicated, **do not delay transport**
Note: Patient assessment may be completed en-route if patient's condition is unstable or is unknown
Control gross bleeding (arterial or major venous)
Spinal immobilization if mechanism of injury suggests spinal injury or is unknown
Shock protocol as indicated (p. 15)
Keep patient warm.
Give nothing by mouth (NPO).
Record your findings and each repeat examination of the patient.
Consider requesting ALS support if available.
Transport as indicated.
Remember to consider possible medical causes or complications of injury

B. Amputations

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Shock protocol as indicated (p. 15)
Control bleeding using direct pressure, elevation, and pressure points. Tourniquet may be considered as a last result, after all other methods have failed
Wrap amputated part in a sterile, **dry** dressing
Place part in plastic bag and seal, label the bag
Place bag in cool solution
Never immerse the part or put it in ice, **prevent from freezing or getting waterlogged**
Transport the amputated part with the patient if at all possible
Consider requesting ALS support if available
Transport as indicated

C. Chest and Abdominal

Airway management protocol and oxygen therapy. (p. 6)
Perform patient assessment. (p. 5)
Shock protocol as indicated. (p. 16)
Manage specific injuries as stated below:
Consider requesting ALS support if available
Transport as indicated

Open chest wound- Cover with an occlusive dressing taped on three sides. Observe closely for signs of a developing tension pneumothorax

Tension pneumothorax- If wound has been sealed, temporarily unseal the wound and allow the air to escape and then re-seal.

Flail chest- stabilize the flail segment with a dressing and tape, sandbag or pillow or with manual pressure

Eviscerations-

Cover with sterile moist dressings
Do not remove any impaled objects; stabilize and immobilize with bulky dressings
Keep patient warm and quiet.

Penetrating Injury-

If the object is still in place, secure in place.
Do not remove penetrating object.

D. Diving Injuries

Airway management protocol and oxygen therapy (p. 6)
Protect from excessive heat or cold
If air evacuation is used, it is critical that the patient be exposed to minimum decreased barometric pressure at altitude. Flight crews must maintain cabin pressure at sea level if possible
Send all diving equipment used by the diver with the patient for examination. If that is not possible, arrange for local examination and gas analysis of air source that was utilized
Diving Accident Network: (919) 684-8111, (24 hours a day 7 days a week). Collect calls are accepted
At this time the active hyperbaric chambers are located in Juneau and Anchorage

Juneau: (907) 586-2622 Bartlett Regional Hospital
Anchorage: (907) 562-5420 American Marine Corp.

Obtaining a complete diving history is imperative:

- time at which the signs and symptoms occurred
- type of breathing apparatus
- type of hypothermia garment worn
- parameters of the dive
- depth of the dive
- number of dives
- duration of dive
- aircraft travel following a dive
- rate of ascent
- experience of the diver (student, inexperienced, or professional)
- properly functioning depth gauge
- previous medical diseases
- old injuries
- previous episodes of decompression illness
- use of medications
- use of alcohol

Consider requesting ALS support if available
If suspected air embolism keep head down during transport (trendelenburg position)
Transport as indicated

E. Extremity Trauma

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Most isolated extremity trauma is not life threatening
Always document pulse, motor and sensory function distal to injury before and after any care
Gentle realignment of uncomplicated fractures not involving joints is permitted to improve immobilization and comfort
Fractures involving joints may be gently repositioned only if distal circulation is absent
Attempt to contact Medical Direction before joint repositioning if possible.
Splinting, elevation, and cold packs (no direct skin contact) may improve patient comfort.
Transport as indicated

F. Eye Trauma

Significant eye injuries should always be considered an emergency
Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Estimate visual acuity if able: patient ability to see light, dark, shapes, finger counting or to read news print
Consider requesting ALS support if available
Transport as indicated

Treat specific eye injury as follows:

Foreign Body in, or Abrasion to the Eye (Non globe penetrating)

Irrigate for at least 15-20 minutes with normal saline or sterile water

Penetrating: (Do not remove)

Stabilize with whatever means are effective (paper cups, bulky dressings etc.).
Patch uninjured eye to minimize eye movement
Transport in position of comfort if no contraindications are present

Blunt Trauma to Eye

Cover injured eye lightly with metal eye shield to prevent any pressure on eye
Transport with head elevated if tolerated

Caustic Substance in Eye

Immediately flush eyes and surrounding areas with copious amounts of water or normal saline for at least 20 minutes
Remove contact lenses if present
Patch affected eyes if tolerated

G. Head Trauma

Airway management protocol and oxygen therapy (p. 6). If patient requires ventilatory support, ventilate normally with 100% oxygen(A: 12 bpm , I/C: 20 bpm), unless signs of brain herniation are present
If signs of brain herniation(GCS<9, posturing, dilated/unequal/blown pupils) are present hyperventilate at these rates: Adult: 20bpm, Child: 25 bpm, Infant: 30 bpm
Maintain O_2 Saturation > 90%
Maintain BP > 90 mmHg
Perform patient assessment (p. 5)
Always suspect spinal injury-stabilize and immobilize
Evaluate and record mental status or level of consciousness often (GCS p.35)
Consider requesting ALS support
Transport as indicated with head elevated ∠30°if no contraindications are present
Note: Even a single incident of BP < 90mmHG or SaO_2 < 90 has been directly linked to poor patient outcome in patients with traumatic brain injury

H. Sexual Assault

Introduce yourself immediately and explain why you are there
Notify appropriate law enforcement agency
Speak directly to the patient, not someone at the scene
Avoid judgemental statements or comments
Avoid "power positions", position yourself at the victim's level if possible
Carefully explain everything you will be doing
Ask permission before touching the victim
Offer to contact the local rape crisis center or Sexual Assault Team if applicable and available
Provide professional, compassionate treatment
Encourage the patient not to bathe or change clothing to preserve evidence
If the patient has already changed, try to bring along the clothing worn at the time of the assault in separate paper bags
Assess and treat injuries as appropriate
Consider requesting ALS support if needed based on injuries found
Carefully document physical exam and scene size-up

I. Hypoperfusion/Shock

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Control hemorrhage
Follow appropriate trauma guidelines and procedures
Elevate lower extremities 8-12 inches as appropriate (shock position or Trendelenburg.)
Maintain patient body heat.
Give nothing by mouth.
Consider MAST protocol (p. 26)
Consider requesting ALS support if available
Provide rapid transport.

J. Spinal Trauma

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Stabilize spine in neutral alignment at all times
Assess and document any changes in pulse, motor, and sensory function
Extricate as appropriate using KED or rapid extrication
Immobilize on long spine board with appropriate strapping devices.
Note: tachycardia may be absent in neurogenic shock. If the patient has a systolic BP less than 80 mmHg and other signs of shock, consider inflating MAST
Consider requesting ALS support if available
Transport as indicated

V. OB/GYN

A. Vaginal Bleeding

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Get a detailed menstrual/pregnancy history
Consider requesting ALS support if available
Shock protocol as appropriate (p. 15)
Transport as indicated

B. Complications of Pregnancy

General Treatment Guidelines

Remember the best way to treat the baby is to aggressively treat the mother.
High flow oxygen for all pregnant patients.
Pregnant patients may decompensate suddenly so treat all conditions aggressively
Consider requesting ALS support if available

Preeclampsia

Characterized by hypertension(Systolic BP>140-150mmHg) and fluid retention (edema, swelling)
Airway management protocol and oxygen therapy (p. 6) **High Flow O_2**
Perform patient assessment (p. 5)
Request ALS support if available
Be prepared for seizures and take precautions
Transport as indicated. Regardless of mode, avoid lights, sirens or unnecessary stimulation during transport

Eclampsia

Characterized by seizures in addition to the syndrome of preeclampsia
Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Avoid lights or sirens during transport with seizure precautions
Provide seizure care as necessary (p. 9)
Protect the airway and the patient from injury
Transport without delay

First Trimester Bleeding (0-3 months of pregnancy)

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Place absorbent pad in vaginal area
Treat for shock as needed (p. 15)
Save any passed tissue if possible
Document amount of blood loss
Transport as indicated

Third Trimester Bleeding (6-9 months of pregnancy)

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Obtain history (see p. 41 for specific questions)
Place patient on left side
Treat for shock as needed (p. 15)
Transport Left Lateral Recumbent as indicated

Trauma During Pregnancy

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Specifically check for vaginal bleeding, discharge, uterine contraction & fetal movement
Obtain history (see p. 41 for specific questions)
Spinal immobilize as needed
Tilt board to left 20 - 30 degrees to shift uterus off of the venacava for transport
Shock protocol as needed (p. 15)
Transport as indicated

C. Childbirth

Assess for imminent delivery:

- regular contractions 2-3 minutes apart
- ruptured membranes (bag of waters)
- bloody show (passage of mucus plug)
- urge to push
- crowning

If delivery is imminent:

Prepare OB Kit or supplies
Document the color of the fluids (meconium stained fluid means a baby in distress)
Create a sterile field if possible for delivery
Prevent an explosive delivery by applying gentle, steady pressure over the baby's head and the mother's perineum
When the baby's head is delivered, assess the baby's neck for the presence of the umbilical cord. If present slip it over the neck. If the cord will not slip easily over the head, clamp the cord in two places and cut in between the clamps.
Suction the baby's mouth and then the nose
Glide the baby's body downward to deliver the upper shoulder and then upward to deliver the lower shoulder
Leave the baby at the level of the mother's perineum
Stimulate the baby by rubbing and drying baby off
Preserve warmth
After the umbilical cord stops pulsating (usually 20-30 seconds after delivery) clamp the cord 6 and 9 inches from baby and cut in between the clamps
Care for the newborn as described below
To reduce the mother's post-delivery bleeding, encourage the mother to breast feed and massage the mother's lower abdomen (uterine massage)
If mother prefers, mother may nurse infant if no distress is present
The placenta usually delivers within 20 minutes after delivery of the baby
Place it in a plastic bag and bring it with the patient
Place an absorbent pad to the mother's perineal area and assess for ongoing bleeding
If excessive bleeding is present, treat for shock (p. 15)

D. Complications of Delivery

Prolapsed cord

Presentation: occurs when the umbilical cord falls down into the pelvis and is compressed between the fetus and the body pelvis. The cord may be seen in the vaginal area.
Reach into the vagina with sterile gloves, push the presenting part off of the cord and remain in this position during transport.
Attempt to palpate the cord for pulsations.
Place the mother in Trendelenburg or knee-chest position.
Airway management protocol and oxygen therapy. (p. 6)
If assistance is available, apply a dressing moistened with sterile saline to the exposed cord.

Breech and other abnormal presentations

Presentation: presenting part is feet or buttocks-breech; an arm or leg presents-abnormal presentation
If breech delivery occurs and field delivery is unavoidable, allow the entire body to be delivered with contractions only while you support the infant
If the head does not deliver and the baby begins to breathe spontaneously, place a gloved hand in the vagina with the palm toward the infant's face
Form a "V" with the index and middle finger on either side of the infant's nose
Push the vaginal wall away from the infants face
If necessary, continue during transport
If the presenting part is an arm or leg, vaginal delivery is very unlikely.
Airway management protocol and oxygen therapy (p. 6)
Transport immediately and safely

E. Care of the Newborn

Ensure the infant's airway is kept suctioned clear
Keep the baby well dried and warm and cover the baby's head to prevent heat loss
Keep the ambient room heat up
If the baby is not breathing after a few seconds of tactile stimulation, begin ventilations immediately with 100% oxygen at a rate of 40-60 breaths per minute
Approximately 30 seconds after stimulation, the baby should be pink (except possibly extremities), respirations should be strong, and the pulse should be at least 100 per minute.
If color alone is the problem, provide blow-by oxygen and monitor
If the baby's heart rate is initially below 80 but above 60, provide ventilatory assistance
If the heart rate then increases, provide ventilatory assistance as needed
If the baby's heart rate is initially 60 or below, begin chest compression's and CPR
Monitor respirations and pulse frequently
Determine and record APGAR score (p. 36) 1minute after delivery and 5 minutes after delivery if time allows
If mother prefers, mother may nurse infant if no distress is present

VI. Pediatric Emergencies (Infants and Children)

A. Fever (Rectal temperature is most accurate)

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Gather history (see p. 41 for specific questions)
Remove excess clothing
Every child with unexplained fever should be evaluated to rule out sepsis/meningitis (especially < 3 months)
If meningitis is suspected, masks should be worn and follow-up with ER physician regarding need for drug prophylaxis
Signs and symptoms of possible meningitis or sepsis: fever, altered level of consciousness, irritability, lethargy, vomiting, seizures, and bulging fontanel assessed in a seated (rather than supine) patient, hemorrhagic rash.
Additional cooling such as sponge bathing are not indicated in pre-hospital setting without direct contact with medical control
Transport as indicated. Infants <3 mo. with a temperature >101 F must be evaluated

B. Respiratory Emergencies

Airway management protocol and oxygen therapy (p. 6)
If the oxygen mask is not tolerated, blow by oxygen may be utilized
If airway is obstructed, clear it
Do not insert anything into the mouth
Transport in position of comfort and to decrease excitability
Perform patient assessment as deemed necessary (p. 5)
Assess for nasal flaring, retractions, accessory muscle use and other signs of severe distress
Attempt not to overstimulate the patient
Monitor heart rate and respiratory rate frequently
Pulse oximeter if available, goal is to keep saturation levels at or above 92%
If patient is wheezing and has own prescribed metered dose inhaler, obtain permission from medical control to administer as directed (p. 31) use of spacer device is preferred
Transport as indicated

C. Seizures

Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment. (p. 5)
Perform a Dextro Styx .
Obtain history. (See p. 41 for specific questions.)
Supportive care as needed.
If child is in status epilepticus, has been seizing repeatedly, or has respiratory depression in the postictal period, ALS rendezvous should be requested if available.

D. Dehydration

Moderate dehydration: dry, mucous membranes, absence of tears
Severe dehydration: tachycardia, **prolonged capillary refill**, cool extremities, tachypnea and increased depth, decreased level of consciousness, depressed fontanel, prolonged skin turgor. **Do not wait for a drop in BP!**
Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment (p. 5)
Elevation of extremities may be needed in severe cases
Supportive measures as needed
Consider requesting ALS support if available
Transport as indicated

VII. Hypothermia/Cold Injuries & Cold Water Near Drowning

A. General points

In the cold patient, a rectal temperature on a hypothermia thermometer is one of the vital signs: **A-**airway, **B-**breathing, **C-**circulation, and **D-**degrees

The simplest assessment of a patient's body temperature may be performed by placing an gloved hand against the skin of the patient's back or chest. If it feels warm, hypothermia is unlikely. This does not provide a reliable estimate of the patient's core temperature

Rectal temperatures with a low reading thermometer are more accurate than body core temperatures

Signs and symptoms of hypothermia can be mimicked or obscured by alcohol, diabetes, altitude sickness, overdoses and other conditions; injuries and illnesses should be assessed carefully

Oxygen and fluids coming into contact with the patient should be warmed

Since cold skin is easily injured, avoid direct application of hot objects or excessive pressure

Through resuscitative efforts, keep a positive attitude

The ambulance and any rooms hypothermia patients are treated in should be warmed, ideally above 80°F (26.7°C)

CPR has no significant effect on survival of the hypothermic patient in the following situations, and, in accordance with state law, CPR should **not** be initiated when:

- Cold water submersion patients have been under the water for more than 1 hour
- Hypothermia patients with a core temperature of less than 60°F (15.5°C)
- Obvious fatal injuries, e.g. decapitation
- Frozen patients, e.g. ice formation in the airway
- The chest wall is so stiff that compression is impossible
- Rescuers are exhausted or at danger

The patient with severe hypothermia should be handled very gently

The pulse should be checked for up to 45 seconds when assessing a hypothermic patient or a patient who has been removed from cold water

Recent legislation (1994 HB 39) has empowered EMTs, paramedics, and physician assistants to declare death in the field following 30 minutes of properly performed advanced life support, even when the patient is hypothermic. It is **recommended** in these cases, however, that resuscitations be continued for at least **60 minutes** and be **combined with** the **rewarming** techniques found in these guidelines before being terminated

B. Hypothermia

Assessment Of Patient:

Severe Hypothermia: If the patient is cold and has any of the following signs or symptoms, he is considered to have severe hypothermia:

- Temperature of 90°F (32.2°C) or less
- Depressed vital signs, such as a slow pulse and/or slow respirations
- Altered level of consciousness, including slurred speech, staggering gait, decreased mental skills, or the lack of response to verbal or painful stimuli
- No shivering in spite of being very cold. (Note: This sign is potentially unreliable and may be altered by alcohol intoxication.)

Mild to Moderate Hypothermia: If the patient is cold(90-98F) and does not have any of these signs or symptoms, he is considered to have mild hypothermia

Basic Treatment For Hypothermia:

Prevent further heat loss. Insulate from the ground, protect from the wind, eliminate evaporative heat loss by removing wet clothing or by covering the patient with a vapor barrier (such as a plastic garbage bag), cover the head and neck and move the patient to a warm environment. Consider covering the patient's mouth and nose with a light fabric to reduce heat loss through respirations.

Treat and transport to a medical facility.

Do not give alcohol.

When administered, oxygen should be heated to 105°-108°F (40.5°-42.2°C), measured at the mouth, and humidified

Splinting should be performed, when indicated, with caution to prevent additional injuries to frostbitten tissues.

Treatment For Mild to Moderate Hypothermia

Treat patient as stated in above section.

If you are unable to get to a medical facility, rewarm the patient gradually by:

- Placing patient in a warm environment
- Increasing heat production through exercise and calorie/fluid replacement
- Rewarming passively through application of insulated heat packs to head, neck, underarms, sides of the chest wall, and groin, and heavy insulation to prevent further heat loss.
- Consider warm bath or shower if patient is conscious
- Place the patient in a sleeping bag and providing contact with a warm body should be considered as a last resort as it may endanger the rescuer and is less efficient than other methods
- Encourage the patient to drink warm fluids as soon as they are capable of swallowing and protecting their airway.

Treatment For Severe Hypothermia With Signs Of Life (pulse and respirations present)

Obtain a core temperature (rectal).

Treat the patient as outlined in above sections except:

- Do **not** put severely hypothermic patients in a shower or bath
- Do **not** give a patient oral fluids unless he or she is capable of swallowing and protecting his or her airway

Transport patient to a medical facility as soon as possible

Avoid rough handling

Treatment For Severe Hypothermia With No Life Signs

Treat as above.

If no pulse (after checking for up to 45 seconds) and no respirations and CPR is indicated, begin CPR

Use mouth-to-mask breathing

If the rescuers are authorized to use an AED and the device states that shocks are indicated, one set of three stacked shocks should be delivered. If the core temperature of the patient cannot be determined or is above 86°F, treat the patient as if normothermic. If the patient's core temperature is below 86°F, discontinue use of the AED after the initial three shocks

If resuscitation has been provided in conjunction with rewarming techniques for more than 60 minutes without the return of spontaneous pulse or respirations, contact medical control for recommendations. If contact is impossible, consider terminating the resuscitation in accordance with HB 39

C. Cold Water Near Drowning:

General Points:

Cold water is defined as being less than 70°F (21.1°C)

Anyone submerged long enough to be unconscious should be transported to the hospital, even if they have regained consciousness

If the person has been under water for **less** than one hour, full resuscitative efforts should be employed. If the person has been under water for **more** than one hour, resuscitation efforts are usually unsuccessful unless they show signs of life

Recent legislation (1994 HB 39) has empowered EMTs, paramedics, and physician assistants to declare death in the field following 30 minutes of properly performed advanced life support, even when the patient is hypothermic. **It is recommended in these cases, however, that resuscitations be continued for at least 60 minutes and be combined with the rewarming techniques found in these guidelines before being terminated**

If the length of submersion it is not known, consider it to be less than one hour with full resuscitative measures taken

Because hypothermia is rarely profound (below 85°F (29.4°C) in cold water near drowning, the hypothermia aspect of the problem is less critical than the pulmonary or coagulation aspects. Thus, rewarming is done very cautiously and gradually, without the need for invasive warming techniques (e.g. peritoneal lavage or AV shunts)

Accumulation of fluid in the lungs (non-cardiogenic pulmonary edema) may develop 6 - 24 hours after submersion, therefore **all surviving patients of an immersion episode should be transported to the hospital**

Evaluation and Treatment:

The Heimlich Maneuver should be used only when a foreign body airway obstruction is suspected.

CPR must be started immediately when the patient is determined to be pulseless after a pulse check of up to 45 seconds.

Assess carefully for associated injuries.

Follow the section on Hypothermia on page 20-23 for additional therapy as needed.

D. Frostbite

General Points:

Hypothermia and other life threatening conditions may be present in the patient with frostbite and must be evaluated and treated immediately

If transporting a patient with frostbite which will not be rewarmed in the field, the provider should protect the frostbitten parts from additional injury and temperature changes

Prevent refreezing

Superficial frostbite affects the dermis and shallow subcutaneous layer of the skin and is recognized by white or gray colored patches. The affected skin feels firm, but not hard. The skin initially turns red and, once frostbitten, is not painful. No tissue loss will occur when treated properly

Deep frostbite affects the dermal and subdermal layers and may involve an entire digit or part.

The skin feels hard and cold and the affected tissue is white or gray

A pulse cannot be felt in the deeply frostbitten tissue and skin will not rebound when pressed.

Large blisters on the frostbitten area indicate that deep frostbite has partially thawed

Treatment of deep frostbite is usually extremely painful and best accomplished in a medical facility.

If you can get the patient to a medical facility within a reasonable amount of time, or do not have the capability to rewarm the tissues properly or cannot prevent refreezing, you should transport the patient rather than attempt to rewarm the tissue in the field. Advice should be sought from medical control before electing to rewarm frostbitten tissue in the field, whenever possible

In most circumstances, the risks posed by improper rewarming or refreezing outweigh the risks of delaying treatment for deep frostbite

Tissue which is thawed and then refrozen almost always dies

If rewarmed in the field, frostbitten extremities cannot be used for ambulation

Do **not:**

- rub the frozen part
- allow the patient to have alcohol or tobacco
- apply ice or snow
- attempt to thaw the frostbitten part in cold water
- attempt to thaw the frostbitten part with high temperatures such as those generated by stoves, exhaust, etc.
- break blisters which may form.

Frostbitten tissues should be handled extremely gently before, during, and after rewarming.

Evaluation and Treatment:

Anticipate, assess and treat the patient for hypothermia, if present

Assess the frostbitten area carefully since the loss of sensation may cause the patient to be unaware of soft tissue injuries in that area

Obtain a complete set of vital signs and the patient's temperature

Obtain patient history, including the date of the patient's last tetanus immunization

If there is frostbite distal to a fracture, attempt to splint the fracture in a manner which does not compromise distal circulation

Determine where rewarming will take place (e.g. in the field, at the hospital, or clinic)

If transporting, protect the tissue from further injury from cold or impacts

If the decision is made to rewarm frostbitten tissue in the field, you should prepare a warm water bath (approximately 100°- 106°F or 37.8°- 41.1°C) in a container large enough to accommodate the frostbitten tissues without them touching the sides or bottom of the container

A source of additional warm water should be available

Remove jewelry and clothing from affected area

If possible, consult a physician regarding the administration of oral analgesics, such as acetaminophen, ibuprofen, or aspirin or morphine

The water should be maintained at approximately 100°- 106°F or 37.8°- 41.1°C and gently circulated around the frostbitten tissue until the distal tip of the frostbitten part becomes flushed.

Pain after rewarming usually indicates that tissue has been successfully rewarmed

After rewarming, let the frostbitten tissues dry in the warm air. Do **not** towel dry

After thawing, tissues that were deeply frostbitten may develop blisters or appear cyanotic

Blisters should not be broken and must be protected from injury

Pad between affected digits and bandage affected tissues loosely with a soft, sterile dressing.

Rewarmed extremities should be kept at a level above the heart, if possible

Protect the rewarmed area from refreezing and other trauma during transport. A frame around the frostbitten area should be constructed to prevent blankets from pressing directly on the injured area

Do not allow an individual who has frostbitten feet to ambulate except when the life of the patient or rescuer is in danger. Once frostbitten feet are rewarmed, the patient becomes non-ambulatory

VIII. Burn Guidelines

A. Burns Requiring Specialized Care in a Recognized Burn Center or Unit:

Partial and full thickness burns of greater than 10% TBSA (total body surface area) in patients less than 10 years of age or more than 50 years of age
Partial and full thickness burns of greater than 20% TBSA in all other age groups
Full thickness burns totaling 5% TBSA or more in any age group
Partial and full thickness burns with serious threat of functional or cosmetic impairment involving the face, neck, eyes, ears, hands, feet, major joints, genitalia, and perineum
Electrical or Chemical burns
All burns associated with inhalation injury
Circumferential burns of the chest or extremities
Burns associated with major trauma
Burns in patients with pre-existing medical disorders or in the very young or the very old

B. Management of Major Burn Injury

Perform scene survey!
Airway management protocol and oxygen therapy (p. 6)
Perform patient assessment and gather history (p. 5)
Stop the burning process with application of wet sterile dressing
After the burning process is stopped, change dressing to dry sterile dressing to prevent hypothermia
Remove all clothing and jewelry (do not pull burned clothing from the wound.)
Elevate burn injury if possible to reduce swelling
Flush chemical burns with water for 15-20 minutes
Protect yourself from contact with corrosive material or electric current!
Complete Focused History and Physical Exam
Estimate the area of burn injury (TBSA). See "The Rule of Nines" in appendix. (p. 40)

C. Transfer of Burn Patients:

Contact area burn center physician as soon as possible. May be referred to clinic authorities if time doesn't permit..

Information to be given to burn center physician at initial contact:

Age and sex of victim.
Size (% of TBSA), depth and location of burns.
Mechanism and time of burn injury.
State of ABC and whether patient has or will need to be intubated.
Resuscitative measures being carried out and patient's response.
Relevant medical history.
Presence of associated injuries.

Information to accompany patient at time of transfer:

Copies of all medical records, laboratory data, X-rays, EKG's, etc.
A history of the injury and how it occurred, and of known pre-existing disease and allergy.
Accurate recordings of all fluid volumes and medication dosages given, and of frequent vital signs and urinary output.

IX. MAST Protocol

A. Guidelines

The American College of Surgeons states in their Advanced Trauma Life Support Guidelines that the efficiency of MAST in the rural setting remains unproved, in the urban prehospital setting, controversial. Currently, there is a great deal of research concerning the optimum systolic blood pressure to be achieved and maintained during trauma resuscitation efforts

These protocols specify 90 mmHg as a target for the patient's systolic blood pressure

B. Indications

Pelvic or multiple leg fractures. If patient is normotensive, inflate only until fractures are immobilized

Signs of shock are present and systolic blood pressure is less than 90 mmHg

C. Contraindications

Pulmonary edema

Special precautions: DO NOT inflate the abdominal section if the patient is obviously pregnant, has eviscerated bowels, an impaled object in the abdominal area, or known diaphragmatic rupture

Special precautions for inflation with any uncontrolled hemorrhage outside the confines of the garment, e.g. thorax, upper extremity, scalp, face or neck

If an abdominal aortic aneurysm is suspected, contact medical direction prior to inflation

If a penetrating chest injury exists, contact medical direction prior to inflation

D. Special Points

The MAST should be inflated on the basis of the patient's signs and symptoms and blood pressure and not the pressure within the suit

DO NOT DEFLATE the MAST in the field except if severe respiratory difficulty develops and in the patient in cardiogenic shock who develops pulmonary edema and /or worsening vital signs. In this case, seek advice from medical control

Be alert for pressure changes caused by altitude and temperature variations

A traction splint can be applied over inflated MAST if time allows

E. Application and Inflation Procedure

Airway management protocol and oxygen therapy (p. 6)

Perform patient assessment (p. 5)

Control external hemorrhage if present

Listen for bilateral breath sounds for presence or absence of pulmonary edema

Remove shoes, belt, and pants

Apply MAST and inflate leg sections simultaneously until suit is tight but easily dented with finger, or until Velcro fasteners begin to crackle, or pop-off valves release, or until systolic BP is 90 mmHg.

Recheck vitals and lung sounds (NOTE: if systolic BP is initially less than 70 mmHg, inflate all sections at this time without rechecking vitals in between sections)

If needed, inflate abdominal section as described above

Recheck vitals and lung sounds

F. Deflation Procedures

Only deflate upon orders from medical control

Disconnect the stopcock from the abdominal section tubing of the foot pump

Slowly open the stopcock and allow a small amount of air to escape. Reassess vital signs every 5 minutes

If the BP has dropped by more than 10 mmHg systolic, pulse increases by 10, or the patient's condition has worsened, discontinue deflation procedure

If the patient's condition permits, slowly deflate each leg segment. Leave the deflated MAST in place until further care is provided

X. Special Guidelines

A. Death in the Field (A.S. 18.08.089)

Always attempt to contact medical control when making pronouncement decisions!

The EMT may <u>withhold</u> resuscitation efforts when the patient has

Injuries incompatible with life, including cardiac arrest accompanied by:
- incineration
- decapitation
- open head injury with loss of brain matter
- or detruncation

Cardiac arrest accompanied by rigor mortis or cardiac arrest accompanied by the presence of post mortem lividity

ALS is not available, the patient is not hypothermic, proper CPR has been performed for at least 30 minutes and the patient has not developed spontaneous respiration or pulse.

The EMT may <u>terminate</u> resuscitation efforts when:

ALS is not available, the patient is not hypothermic, proper CPR has been performed for at least 30 minutes and the patient has not developed spontaneous respiration or pulse.

ALS has been properly provided for at least 30 minutes to a patient without restoring spontaneous respiration or pulse; or

The patient is hypothermic and the patient has received at least 60 minutes of properly performed cardiopulmonary resuscitation in conjunction with rewarming techniques as described in the Hypothermia and Cold Water Near Drowning Guidelines without the patient developing spontaneous respiration or pulse

When in doubt attempt resuscitation

If the Death was Pronounced Enroute:

Reattempt radio communications with on-line medical control, if appropriate

Transport the deceased to the clinic or hospital, contact the law enforcement agency which has jurisdiction for further guidance

If the Death was Pronounced at the Scene:

Notify medical examiner (907) 269-5090 and/or law enforcement personnel

Notify survivor, if appropriate

Treat the scene as if it were a crime scene

Protect scene until medical examiner and/or law enforcement personnel arrive

Minimize the number of personnel at scene

Personnel exiting the scene should retrace the same route they took to enter, if possible

If in a residence or building:

Remember what you've touched and your entrance route

Avoid touching objects

Avoid using the residence telephone

Be prepared to describe the condition of scene, e.g. placement of objects, etc., when you arrived.

Leave tubes and IV lines in place

Don't disturb clothing, jewelry, the contents of pockets, and other personal effects, particularly if this case is likely to be reviewed by the Medical Examiner

Comfort One Program©/DNR Orders:

Comfort One© enrollment or DNR orders will be:
- Respected by all EMS personnel
- Must be complete and on-hand to be considered valid
- Documented on the run sheet

When in doubt, begin resuscitation as needed

Verifying eligibility includes confirming the identity of the patient and determining whether the patient has a valid DNR order

Protocols:
- If the patient does not have a valid DNR order, the standard treatment and transport protocols including CPR, should be employed
- If the patient **DOES** have a valid DNR order, resuscitation efforts should not be initiated or, if already in progress, terminated immediately
- Health care personnel should provide comfort care as appropriate for the patient and within their scope of practice

Recommendations:
- Appropriately trained and equipped health care workers **may** provide comfort for the DNR patient by:
  - suctioning the airway
  - administering oxygen
  - assisting the patient to a comfortable position
  - providing emotional support
  - contacting hospice, home health agency or attending physician
- Health care workers **should not:**
  - use advanced airway devices, such as an ET tube or multilumen airway
  - initiate cardiac monitoring
  - administer cardiac resuscitation drugs
  - defibrillate
  - provide ventilatory assistance
- Contact law enforcement as stated above
- Those patients who arrest en route with valid DNR orders should be transported to the receiving facility. Contact the hospital prior to arrival and advise them of the patient's status

Documentation:

The pronouncement of death must be certified by a physician with 24 hours after the pronouncement is made by the EMT

The EMT should complete the EMS run report

The EMT must provide, to the person signing the death certificate, the following information:
- the presence of a contagious disease, if known
- date and time of death

Providing the EMS run report to the person signing the death certificate may be helpful.

B. Reporting Requirements

TYPE INCIDENT	HOW	TO WHOM
Child abuse or neglect	Oral report	Division of Family and Youth Services, 907-276-1450 , if not possible to the nearest law enforcement
Vulnerable adult abuse or neglect	Oral report	Division of Senior Services, 1-800-478-9996 in Anchorage 563-5654- within 24 hours after first having cause for the belief
Elderly abuse or neglect	Oral report	Division of Senior Services, 1-800-478-9996 in Anchorage 563-5654- within 24 hours after first having cause for the belief
Bullet wound, powder burn, or other injury caused by firearm	Oral & written	Oral report promptly to Department of Public Safety (DPS), written reports within 3 days to DPS on provided form
Injury by knife, ax, or other sharp or pointed instrument unless clearly accidental	Oral & written	Oral report promptly to Department of Public Safety (DPS), written reports within 3 days to DPS on provided form
An injury that is likely to cause the death of the patient	Oral & written	Oral report promptly to Department of Public Safety (DPS), written reports within 3 days to DPS on provided form
Burns partial and/or full thickness covering 5%, or more, of the patient's body	Oral & written	Same as above
Burns to patient's upper respiratory tract or laryngeal edema due to inhalation of superheated air	Oral & written	Same as above

XI. Appendices

A. ***Drug Reference***

ACTIVATED CHARCOAL

ACTION:	Binds and absorbs ingested toxins; once toxin is bound to activated charcoal, it is excreted from the body.
INDICATIONS:	Poisoning, following emesis or in cases where emesis is contraindicated.
PRECAUTIONS:	Should not be given before or together with Ipecac, should be given after vomiting from Ipecac has ceased. Of no value with methanol, caustic alkali or acids, iron tablets and organophosphates.
SIDE EFFECTS:	Possible Nausea/ vomiting, tarry stools
DOSE:	1gm/kg

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Metered Dose Inhaler (Albuterol)

ACTION:	Relaxes bronchial smooth muscle relieving bronchospasm.
INDICATIONS:	Acute asthma attacks or acute exacerbation's of COPD.
PRECAUTIONS:	May be ineffective in patients taking beta blockers(propranolol). If patient has already used their inhaler, rinse their mouth out with water to remove white residue and increase effectiveness.
CONTRAINDICATIONS:	Tachyarrhythmias, should be used with caution in pts with hypertension, angina
SIDE EFFECTS:	Palpitations, tachycardia, nausea, tremor, nervousness, dizziness.
DOSE:	**Metered-dose inhaler**: should take 1 to 2 inhalations may be repeated in 15 minutes.

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EPINEPHRINE-AUTO INJECTOR (EPINEPHRINE 1:1,000)

ACTION:	Potent sympathomimetic with effects on both alpha and beta receptors. Alpha effects increase myocardial and cerebral blood flow. The beta effects increase heart rate, automaticity, cardiac contractility, oxygen demand, and bronchodilation.
INDICATIONS:	Anaphylaxis
PRECAUTIONS:	Protect from light
SIDE EFFECTS:	Angina, hypertension, palpitations
DOSE:	Adult: 1 Epi-auto injector 0.3 mg SQ Pediatric: 0.15 mg SQ

GLUCOSE - ORAL

ACTION:	Increases blood sugar
INDICATIONS:	Pts with hypoglycemia or altered mental status with a known history of diabetes.
CONTRAINDICATIONS:	Unconsciousness, unable to swallow.
SIDE EFFECTS:	None if given properly, may be aspirated by pt without gag reflex.
DOSE:	one tube

IPECAC

ACTION:	Induces vomiting
INDICATIONS:	To induce vomiting in poisoning or overdose in a conscious patient with an intact gag reflex.
PRECAUTIONS:	Patient at risk for aspiration
CONTRAINDICATIONS:	Stupor or coma; absent gag reflex; seizures; pregnancy; acute myocardial infarction; children under 6 months of age; ingestion of: corrosives, volatile hydrocarbons, strychnine or iodides.
SIDE EFFECTS:	Possible aspiration of vomit
DOSE:	Adult: 30cc followed by 2-3 glasses of water. Child: 15cc followed by 1-2 glasses of water.

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NITROGLYCERIN (NTG)

ACTION:	Relaxes smooth muscle, causing vasodilation of coronary arteries thereby increasing blood flow to heart. Vasodilates peripheral vessels, thereby promoting pooling of blood in the systemic circulation and reducing blood return to the heart.
INDICATIONS:	Relief of pain in angina. Treatment of pulmonary edema in congestive heart failure.
CONTRAINDICATIONS:	Increased intracranial pressure Glaucoma Hypovolemia Hypotension
SIDE EFFECTS:	Headache (transient) Hypotension, dizziness, weakness Flushing
DOSE:	0.4 mg sublingually, tablet or mitered dose spray. May be repeated q 3-5 min. to total of 3 doses.

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OXYGEN

ACTION:	Reverses effects of hypoxemia
INDICATIONS:	Any condition in which hypoxemia may be present.
PRECAUTIONS:	Use cautiously in patients with COPD, as oxygen may depress respirations. High concentrations to neonates for a prolonged period can damage eyes, but this is rarely a consideration in the pre-hospital setting.
CONTRAINDICATIONS:	There are no contraindications to oxygen. **Never deprive the hypoxic patient of oxygen for fear of respiratory depression.**
SIDE EFFECTS:	None when given for short periods.
DOSE:	2-6 liters/minute: nasal cannula 10-15 l/min: non-rebreather mask 15 l/min: bag valve mask or positive pressure oxygen powered device

B. Glasgow Coma Scale:

Infant		Child/Adult
	Eye Opening	
Spontaneously	4	Spontaneously
To speech	3	To command
To pain	2	To pain
No response	1	No response
	Best Verbal response	
Coos, babbles	5	Oriented
Irritable cries	4	Confused
Cries to pain	3	Inappropriate words
Moans, grunts	2	Incomprehensible sounds
No response	1	No response
	Best Motor Response	
Spontaneous	6	Obeys commands
Localizes pain	5	Localizes pain
Withdraws from pain	4	Withdraws from pain
Flexion(decorticate)	3	Flexion(decorticate)
Extension(decerebrate)	2	Extension(decerebrate)
No response	1	No response

C. APGAR Score:

SIGN	0	1	2	SCORE	
				1 min	5 min
Appearance (skin color)	Blue, pale	Body pink, extremities blue	Completely pink		
Pulse Rate (heart rate)	Absent	Below 100	Above 100		
Grimace (irritability)	No response	Grimaces	Cries		
Activity (muscle tone)	Limp	Some flexion of extremities	Active motion		
Respiratory (effort)	Absent	Slow and irregular	Strong cry		
			TOTAL SCORE=		

⇒A score of 7-10 indicates an active and vigorous neonate that requires only routine care
⇒A score of 4-6 indicates a moderately depressed neonate that requires oxygenation and stimulation
⇒A score of less than 4 indicates a severely depressed neonate requiring immediate resuscitation

D. Pediatric Emergency Reference Chart

Average Normal Vital Signs In Children At Rest:

	Pulse	BP	Resp.
Newborn	120-160	74/40	30-50
Infant	80-140	85/60	20-30
Toddler	80-130	90/60	20-30
Pre-school	80-120	95/62	20-30
School age	75-110	96/64	12-30
Adolescent	60-100	100/60	12-20

Average Pediatric Weights:

	Pre-term	Term	6 mo	1 yr	3 yrs	6 yrs	8 yrs	10 yrs	12 yrs	14 yrs
Weight pounds	3 lbs	7.5 lbs	15 lbs	22 lbs	33 lbs	44 lbs	55 lbs	66 lbs	77 lbs	99 lbs
Weight kg.	1.5 kg	3.5 kg	7 kg	10 kg	15 kg	20 kg	25 kg	30 kg	35 kg	45 kg

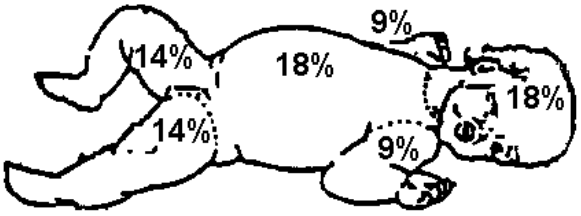
D. Common Medical Abbreviations

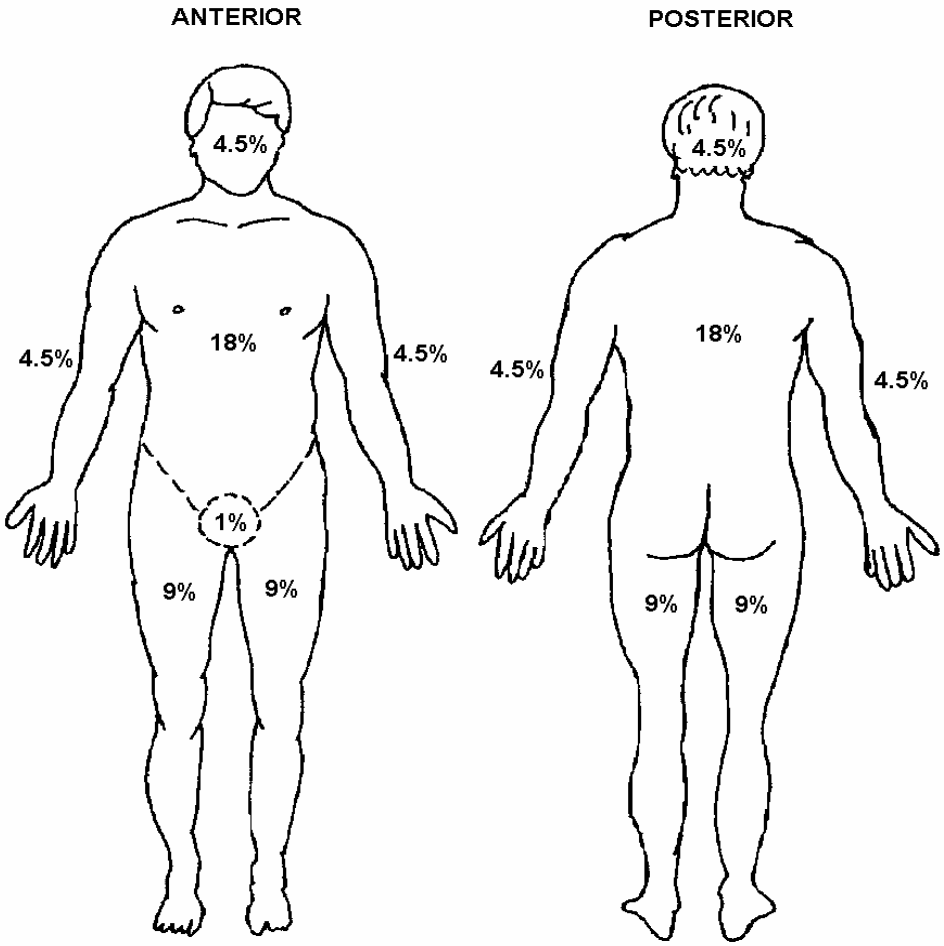
↑	=	elevated, high, increasing
↓	=	depressed, low, decreasing
→	=	progressing to, resulting in, followed by
>	=	greater than
≥	=	greater than or equal to
<	=	less than
≤	=	less than or equal to
Δ	=	change (delta)
φ	=	no, none
♀	=	female
♂	=	male
a̅	=	before
ABCs	=	airway, breathing and circulation
abd	=	abdomen
ALS	=	advanced life support
AMI	=	acute myocardial infarction
ASA	=	acetylsalicylic acid (aspirin)
BLS	=	basic life support
BP	=	blood pressure
BSA	=	body surface area
c̅	=	with
CA	=	cancer
CAD	=	coronary artery disease
cc	=	cubic centimeter (same as milliliter)
CC	=	chief complaint
CHF	=	congestive heart failure
CHI	=	closed head injury
cm	=	centimeter
CNS	=	central nervous system
CO	=	carbon monoxide
c/o	=	complaining of
CPR	=	cardiopulmonary resuscitation
COPD	=	chronic obstructive pulmonary disease
CSF	=	cerebrospinal fluid
CVA	=	cerebrovascular accident
DC	=	discontinue
DCAP-BTLS	=	Deformities,Contusions,Abrasions,Punctures,Burns,Tenderness,Lacerations,Swelling
DOA	=	dead on arrival
DOB	=	date of birth
DT's	=	delirium tremens
Dx	=	diagnosis
D_5W	=	5% dextrose in water
ECG, EKG	=	electrocardiogram
ED	=	emergency department
EMS	=	emergency medical systems
EMT	=	emergency medical technician
ENT	=	ears, nose, throat
EOA	=	esophageal obturator airway
ER	=	emergency room
ET	=	endotrachial

ETOH	=	alcohol
FB	=	foreign body
FUO	=	fever of unknown origin
Fx	=	fracture
GI	=	gastro-intestinal
gm	=	gram
gtt	=	drop
GSW	=	gunshot wound
GU	=	genito-urinary
h, hr	=	hour
HA	=	headache
HAPE	=	high altitude pulmonary edema
H&P	=	history and physical
HPI	=	history of present illness
HR	=	heart rate
Hx	=	history
ICP	=	intracranial pressure
ICU	=	intensive care unit
IM	=	intramuscular
IO	=	intraosseous
IV	=	intravenous
IVP	=	IV push
JVD	=	jugular vein distention
kg	=	kilogram
KVO	=	keep vein open (see TKO)
Ⓛ	=	left
L	=	liter
LLQ	=	left, lower quadrant
LMP	=	last menstrual period
LOC	=	level of consciousness, loss of consciousness
LR,LRS	=	lactated Ringer's solution
LUQ	=	left, upper quadrant
MAST	=	military anti-shock trousers
mcg	=	microgram
mEq	=	milliequivalent
mg	=	milligram
MI	=	myocardial infarction
ml	=	milliliter
mm	=	millimeter
mmHg	=	millimeters of mercury
NA	=	not applicable
NAD	=	no acute distress, no apparent distress
NG	=	nasogastric
NKA	=	no known allergies
NKDA	=	no known drug allergies
N_2O	=	nitrous oxide
NPO	=	nothing by mouth
NS	=	normal saline
NSR	=	normal sinus rhythm
NTG	=	nitroglycerin
N&V	=	nausea and vomiting
O_2	=	oxygen
OB	=	obstetric
OD	=	overdose
$\overline{p}$	=	after
P	=	pulse
PASG	=	pneumatic antishock garment (see MAST)
PE	=	pulmonary edema, pulmonary embolism

PEARL	=	pupils equal and reactive to light
PMH	=	past medical history
PMS	=	pulse, motor, sensory
PO	=	by mouth
PRN	=	as needed
PSVT	=	paroxysmal supraventricular tachycardia
pt	=	patient
q̄	=	every
R	=	respirations
Ⓡ	=	right
RLQ	=	right lower quadrant
ROM	=	range of motion
R/O	=	rule out
RUQ	=	right upper quadrant
Rx	=	prescription, treatment
s̄	=	without
ss	=	substernal
s/s	=	signs and symptoms
SC/SQ	=	subcutaneous
SIDS	=	sudden infant death syndrome
SIVP	=	slow intravenous push
SL	=	sublingual
SOB	=	short of breath
STAT	=	immediately
STD	=	sexually transmitted disease
Sx	=	symptoms
sz	=	seizure
T	=	temperature
TIA	=	transient ischemic attack
TKO	=	to keep open (see KVO)
Tx	=	treatment
URI	=	upper respiratory infection
UTI	=	urinary tract infection
VS	=	vital signs
VF	=	ventricular fibrillation
VT	=	ventricular tachycardia
WNL	=	within normal limits
X	=	times
y.o.	=	year old (e.g. 25 y.o.)

F. Rule of Nines





G. Specific Medical Questions and Procedures

OPQRST

- ρ **O**nset-How did this happen? (sudden, gradual)
- ρ **P**rovoked-What where you doing?
- ρ **Q**uality-What does it feel like? (sharp, dull, etc.)
- ρ **R**adiates-Does it hurt anywhere else?
- ρ **S**everity-Scale of 1-10 (1 being no pain 10 being worst pain you've ever felt)
- ρ **T**ime-When did it begin?
- ρ **I**nterventions-Have you done anything or taken anything? Did it make it better?

SAMPLE

- ρ **S**igns/Symptoms
- ρ **A**llergies
- ρ **M**edications
- ρ **P**ast Medical History
- ρ **L**ast Oral Intake
- ρ **E**vents Leading Up to illness

Abdominal Pain

- ρ Location of pain
- ρ Last menstrual cycle
- ρ Taking birth control
- ρ Bleeding or discharge
- ρ Vomiting
- ρ Orthostatic VS (supine, sitting, standing)

Allergies and Anaphylaxis

- ρ What were you exposed to
- ρ How were you exposed
- ρ Effects
- ρ Progression

Behavioral & Psychiatric

- ρ How do you feel?
- ρ Determine if suicidal
- ρ Potential threat to self or others
- ρ Any medical problems
- ρ Where you trying to hurt yourself?
- ρ Have you been feeling that life is not worth living?
- ρ Have you been feeling like killing yourself?

Toxic Ingestion or Poisoning

- ρ Substance
- ρ Time of exposure/ingestion
- ρ Amount
- ρ Over what time period
- ρ Estimated weight

Syncope

- ρ Length of time unconscious
- ρ What position was patient in when episode occurred
- ρ Any previous history
- ρ Blood in vomit or stool
- ρ Recent trauma
- ρ Medic alert jewelry
- ρ Any incontinence
- ρ Orthostatic VS (supine, sitting, standing)
- ρ Pulse, motor, sensory of extremities

Altered Mental Status

- ρ Description of episode
- ρ Duration
- ρ Associated symptoms
- ρ Evidence of trauma
- ρ History of seizures
- ρ Fever

Environmental Emergency

- ρ Source
- ρ Environment
- ρ Duration
- ρ Loss of consciousness
- ρ Effects-general or local

Obstetrics

- ρ Are you pregnant
- ρ How long
- ρ Pain or contractions
- ρ Bleeding or discharge
- ρ Do you feel like pushing
- ρ Last menstrual period

H. Basic Life Support

CPR/Rescue Breathing

Establish unresponsiveness
Open airway(head tilt-chin lift or jaw thrust)
Check for breathing:
- Breathing present or resumes effective breathing, ensure high flow oxygen, place in recovery position or continue assessment
- Breathing absent, give 2 slow breaths

Check for pulse:
- Pulse present but breathing absent, provide rescue breathing (infant or child-20 breaths per minute, adult-12 breaths per minute)
- Pulse absent, begin chest compressions interposed with breaths (infant or child-5:1; adult 15:2)
- Pulse present but less than 60 beats/minute in infant, or child with poor Perfusion, begin chest compressions (5:1)

Relief of Foreign Body Airway Obstruction

Adult (8 yr. or older)

- Ask "Are you choking?"
- Give abdominal thrusts
- Repeat thrusts until effective or victim becomes unresponsive

Becomes unresponsive

- Perform finger sweep
- Attempt to ventilate
- If still obstructed-reposition head and reattempt to ventilate
- Give 5 abdominal thrusts
- Repeat until effective

Child (1-8 yr.)

- Ask "Are you choking?"
- Give abdominal thrusts
- Repeat thrusts until effective or victim becomes unresponsive

Becomes unresponsive

- If object is seen, perform finger sweep
- Attempt to ventilate
- If still obstructed-reposition head and reattempt to ventilate
- Give 5 abdominal thrusts
- If object is seen, perform finger sweep

Infant (less than 1 yr.)

- Confirm airway obstruction
- Give 5 back blow and 5 chest thrusts
- Repeat until effective or victim becomes unconscious

Becomes unresponsive

- If object is seen, perform finger sweep
- Attempt to ventilate
- If still obstructed-reposition head and reattempt to ventilate
- Give 5 back blows and 5 chest thrusts
- Repeat until effective

Summary of ABC Management:

Maneuver	Adult (over 8 yrs)	Child (1-8 yrs)	Infant (0-1yr)
Airway:	Head tilt-chin lift or jaw thrust	Head tilt-chin lift or jaw thrust	Head tilt-chin lift or jaw thrust
Breathing:			
Initial	2 breaths at 1 1/2-2 seconds per breath	2 breaths at 1-1 1/2 seconds per breath	2 breaths at 1-1 1/2 seconds per breath
Subsequent	12 breaths/minute	20 breaths/minute	20 breaths/minute
Foreign-body airway obstruction	Abdominal thrusts	Abdominal thrusts	Back blows and chest thrusts
Circulation:			
Pulse check	Carotid	Carotid	Brachial
Landmarks	Lower half of sternum	Lower half of sternum	One finger width below nipple line
Method	Heel of one hand, other hand on top	Heel of one hand	Two or three fingers
Depth	1 1/2-2 inches	1-1 1/2 inches	1/2-1 inch
Rate	80-100/minute	100/minute	At least 100/minute
Ratio (compression/vent)	15:2-single rescuer 5:1-two rescuer	5:1	5:1
Recheck pulse	after 1 minute (4 cycles)	after 1 minute (15 cycles)	after 1 minute (15 cycles)